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## Seasonal migration as strategy for livelihood diversification and environmental adaptation in Nepal

RAI, Dipak Raj and DANGAL, Megh Raj

### ABSTRACT

*This article explores seasonal migration as a household strategy for livelihood diversification and environmental adaptation in Nepal's rural mid-hill region to secure livelihoods and cope with environmental difficulties. This relational ethnographic study was conducted in Rukum East, the western part of Nepal, among the Kham Magars, where families migrate seasonally within their region, country, and India, and linked to the New Economics of Labor Migration theoretical approach. Information was obtained through in-depth interviews, participant observation, and living with community members in the study area. Families migrate seasonally to diversify and maximize their livelihood opportunities and income, which helps them with quick remittance earning, risk reduction, increased food security, and the utilization of family labor forces. Seasonal migration to pastoral land for cattle rearing and marijuana cultivation, combined with small-scale farming activities, contributes significantly to the generation of quick cash and food balance. The decision to migrate seasonally is made after assessing agriculture season, weather change as an adaptation to the extent of agriculture, and livelihood activities that will assist families in preserving and utilizing resources that are directly linked to an environmentally dependent livelihood system.*

**KEY TERMS:** seasonal migration, livelihood, environmental adaptation, family, migrants, Nepal

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## INTRODUCTION

Seasonal migration has proven to be one of the most engaging strategies for low-income families in the least developed countries to diversify their livelihoods. Additionally, seasonal migration is viewed as a form of environmental adaptation, in which families assess the situation and migrate to reduce risk and improve coping strategies in the face of hazards. Seasonal migration is decided collectively within households, with some members being assigned to local household economic activities while others are selected for migration to reduce risks and diversify income sources for the entire family. People in developing countries like Nepal, who rely heavily on agriculture for survival, face environmental challenges that force them to engage in a variety of livelihood activities, including short-term migration. This context offers opportunities to investigate how seasonal migration is a strategy for livelihood diversification and environmental adaptation in the mid-hill region, given the unique challenges they face. This article focuses on how people living in the rural mid-hill region, adopt seasonal migration to diversify their livelihoods and adapt to the environment.

## BACKGROUND INFORMATION

Seasonal migration often used interchangeably with circular migration, short-term migration, temporary migration, spontaneous migration, or oscillatory migration, has been a subject of much discourse (Sapkota, 2018; Keshri & Bhagat, 2012; Plewa, 2013; Shonchoy, 2015). Seasonal migration is made for a short time in a year for seasonal conditions and the demand of the labor workers intending to return to one's usual residence (Plewa, 2013; Keshri & Bhagat, 2012). According to Thieme (2007), migration helps to secure a livelihood by reducing the risks of seasonality, harvest failures, food shortage, and earning a small amount of money is extremely valuable among rural families. Furthermore, Siddiqui (2003) argues that migration has long been an important livelihood strategy for people because when the population grew to the point where people could no longer secure a livelihood, they migrated elsewhere and both poor and better-off people continue migration as a livelihood strategy. Different studies show that most rural households rely on multiple sources of income and adopt a range of livelihood strategies such as labor migration, pastoral migration, agriculture, multiple crops, off-farm and non-farm activities by households to provide means of living (DFID, 1999; Thieme & Wyss, 2005; Fang et al., 2014; Singh, 2016; Dinku, 2018; Manlosa et al., 2019; Yanuartati, 2021).

Similarly, the conversation about climate change and migration has shifted from migration solely as a result of climate impacts and response to poverty but describing it as a form of enhancing human adaptation by increasing their financial capabilities and knowledge of agriculture technology (Vinke et al., 2020; Jha et al., 2018; Scheffran et al., 2012). In addition to this migration is also an effective form of environmental adaptation in which households assess all available options for adjusting to hazards and choose the ones that are best suited to their situation, which can include a conscious decision to migrate based on the availability of the required resources. (Vinke et al., 2020). In a rural agrarian setting, Ober & Sakdapolrak, (2017) discuss migration as adaptation in terms of generating income, diversifying livelihoods, spreading household risks, and social or financial remittances. Maharjan et al., (2020) found that migration improves household adaptive capacity and is primarily used as a response to risk and uncertainty, but with the potential for positive adaptation co-benefits. Families migrate by accessing weather change to extent agriculture and livelihood activities which will enhance farmers' coping capacity (Jha et al., 2018). Migration as a key adaptation strategy during environmental change has been highlighted for the local affected people in rural (Fielmua et al., 2017). In times of shock and stress caused by environmental change, households rely on male temporary migration for livelihood and food security, with women remaining to continue agricultural cultivation (Jones & Boyd, 2011).

Shrestha (1998) mentions that seasonal migration within Nepal and beyond the national boundary is not a new phenomenon, which is taken as a solution to the economic and ecological problems of the Nepalese hills. Seasonal migration in Nepal results from both 'push' (high levels of poverty and food insecurity) and 'pull' factors (seasonal employment opportunities elsewhere) (Gill, 2003). There are no records of how many Nepalese migrate seasonally within Nepal or across the border, and the survey shows very complex patterns, with flows primarily moving from higher to lower altitudes within Nepal and more developed areas and urban labor markets in India (Gill, 2003; Ministry of Labor, 2020; IOM, 2019). However, according to the Ministry of Labour, Employment and Social Security (2020), the last migration destination of the seasonal labor migration returnees to India is overwhelming with 37 percent, 73.6 percent, and 90.3 percent of the returnees from Lumbini, Karnali, and Sudurpaschim provinces in west Nepal, respectively. This indicates that there are no records on seasonal migration within Nepal or to India, although seasonal migration to India is an important part of many rural Nepalese's livelihoods, particularly for those from the hills during the off-farming season (IOM, 2019).

In Nepal, 66% of the total population relies on subsistence agriculture and when these agrarian families face environmental challenges, they are forced to consider other options including migration (Chapagain & Gentle, 2015). According to Gautam (2017), one of the drivers of migration is environmental change, which will improve migrant households' adaptive capacities and livelihood resilience through monetary and social remittances.

Poverty, high food insecurity, subsistence farming, decreased land productivity, a search for off-farm economic activities, environmental change, inequalities, uneven development, unemployment, the human network and the lack of basic health and education facilities are the drivers of migration and the expectation of building livelihood resilience through cash earning are the reason for seasonal migration (Rai & Dangal, 2021; Chapagain & Gentle, 2015).

Thus, the main aim of the study is to find out how seasonal migration plays a role in livelihood diversification strategy and adaptation to the environment among Kham Magar, a group of indigenous people living in the rural mid-hill region, Rukum East in western Nepal. The ethnographic study is linked with the New Economics of Labor Migration (NELM) theory. Based on this theory, seasonal migration is considered as one of the most significant livelihood strategies and a risk coping strategy for families with seasonal mobility (Keshri & Bhagat, 2012). NELM theory argues that families in mutual agreement view migration as a calculated strategy and decisions are made collectively based not only to maximize expected income but also on minimizing risks by comparing the cost and benefits across the entire household (Stark & Bloom, 1985; Massey et al., 1993; Chapagain & Gentle, 2015; Mannan & Fredericks, 2015). The following sections describe the research design, tools, data analysis, results, and discussion, and conclude the paper.

## METHODOLOGY

### Study area

The field study to obtain the purpose of this research was conducted in the Gabang, Saipatung, Budhadeda, Khabang, and Janga villages of ward no. 2 of Bhume Rural Municipality in Rukum East District of western Nepal. In this ward of the Bhume Rural Municipality, there are 512 households, and every family has had some sort of migration experience. The indigenous community of Kham Magar makes up the majority of the population. The families adopt seasonal out-migration and transhumance migration for their livelihood source diversification, which has helped us understand seasonal migration as a livelihood strategy and environmental adaptation.

### Sampling

In order to identify and explore seasonal migration as a livelihood diversification strategy and environmental adaptation of the families in the study area, information was obtained from 30 people who were themselves experienced seasonal migrants or aspiring migrants. The field study was conducted during May and August 2021 in Kankri, ward number 2 of Bhume Rural Municipality in Rukum East, district of Nepal. The participants were purposively selected and interviewed after explaining the objective of the study and receiving consent from all the participants. However, pseudonyms are used to protect and maintain the privacy of the participants.

### Research design and tools

This study used a relational ethnographic qualitative research design, which included in-depth interviews, participant observation, and living with the community people in the natural setting to collect information. Relational ethnographic research focuses on the processes and configurations of relationships among various agents, actors, or institutions rather than groups or places. It describes the study by demonstrating connections, associations, and relationships, as well as interdependence among people, migration, livelihoods, and environmental adaptation. Considering the fact, in-depth interviews were conducted with a variety of migrants of various ages, educational backgrounds, and economic and social status. The interview was done with pastoral migrants, seasonal migrants to India, short-term job seekers in construction and travel industries and family members of the migrants. The required guideline was created for the interviews and they were extended as required. Observations were made to see how families make decisions, migration destination and socio-economic activities. During the field visits and study, researchers learned about the family's background, lifestyle, reasons for seasonal migration, living conditions, and ways for environmental adaptation. The gatekeeper from the local community made it very easy to introduce the people to the researcher, opening the discussion, interviews, and translation for the local people.

### Data analysis and interpretation

In-depth interviews, key informant interviews, and discussions were recorded using an audio recorder, and field observations and field visits were documented using a diary that was well organized and securely stored. After the completion of information collection and field study, all interviews, observation notes and field notes were translated and transcribed into the appropriate form. Then, information was coded to analyze and build the themes. Based on the obtained information, theoretical or thematic analysis was done with best-represented narratives given by the participants and the result was checked with the observation, key informants and field notes.

## RESULTS AND DISCUSSION

### Characteristics and destination of seasonal migration

Seasonal migration is an important aspect of the livelihood for many rural Nepalese (IOM, 2019). Farming is the primary livelihood source of rural families and off-farm income-earning activities including seasonal migration make a significant economic contribution and enable farming households to fill the food deficit and meet nonfood needs (Gautam, 2017). There are three types of seasonal migrations are found in the study area international seasonal labor migration to India, internal labor migration within the country and pastoral migration within the specified local region with their cattle. Out-migration occurs according to the season of the year, and it contributes to the families' livelihoods by earning money and reducing food consumption. Seasonal migration to India is primarily associated with construction, farming, and marijuana plantation and harvesting. Within Nepal, internal seasonal labor migrants work on road construction, house construction, masonry, and hydroelectricity site construction. Pastoral migration, also known as transhumance migration, occurs when a group of people migrates to a specific location for a set period to raise cattle, cultivate marijuana, and engage in minimal agricultural activities such as corn, beans, potato, and wheat plantation. Raman Budha (65 years old), the village's elected leader, says:

*Our people from Kankri seasonally migrate in three different locations with the expectation to support families for their subsistence, food security, education and celebrate festivities. The majority of people move to the hillside pastoral areas within our area for raising livestock, small-scale farming and herb collection. During the off-farming season, families also send members of their household to India and other cities in Nepal to work as laborers.*

During the lean agricultural season in the Kankri village, all cattle rearing families migrate to pastoral land, and families with low income and small landholding migrate within the country and India to support families with food, clothing, phones, and save some cash for social activities. Lean seasons can occur as a result of agricultural downturns, and temporary migration is an important coping strategy for a large number of poor rural households in developing countries (Shonchoy, 2015). Though pastoral livestock husbandry and crop farming are not well integrated with the formal economy in our study region, they are vital for subsistence, as agricultural products are necessary for most low-income households' livelihoods (Hauck et al., 2016). These families migrate seasonally for work that is known to them, such as construction labor or work related to animal husbandry and farm activities. The main reasons for seasonal migration are low family income, the need for cash savings for social activities, reducing food insecurity, supporting school children, and social institutional rules for resource preservation.

### Network and agency of seasonal migration

The role of the network in migration decision-making can be a crucial determinant of migration flow by providing information about the destination, work, travel models, assistance and enabling potential migrants to better assess the cost and benefit of work and mitigate the risk (Görlich & Trebesch, 2008). The family network and the village committee are two major actors in the study area that amplify seasonal migration by assisting families in making migration decisions. During our study, we have found migrants follow their family members or relative who have lived in Indian and Nepalese cities. Kullu, in Himachal Pradesh, is the most popular seasonal out-migration destination for Kankri residents. Seasonal migrants are hired by experienced migrants who lease land in India for marijuana cultivation. Similarly, a labor leader (Naike) will arrange for their settlement and employment in the construction and agricultural fields. One of the regular seasonal migrants to India, (Baburam, 43 years old) shares his experience:

*I and my wife both went to India regularly for four years to work in the marijuana field. During those four years, I, along with others from our Rural Municipality, rose to the position of leader (Naike) in India. I employed many of my relatives from our district as well as those from other districts such as Baglung, Bajhang, and Pyuthan. We used to lease land from a local landlord and cultivate marijuana, which has a good seasonal labor demand during the season. Even last year, I traveled to India with my daughters to work in the same field for a shorter time.*

There are five major villages in Kankri, each with its own Village Committee in charge of determining the time, rules, destination, and boundary for the pastoral migration. Those who do not follow the rules of this village committee will be fined according to the committee's rules. Kankri people have their own designated pastoral land, such as Ramli, Ramche, Maring, Hulneta, Gonte, and Churfu highlands, where only families from the designated villages are allowed to migrate seasonally with their cattle. For example, Dilman (30 years old) explained:

*In our region, we seasonally migrate from mid-March to mid-May (Chaitra-Baisakh) and mid-June to November (Asar-Mangsir). Our family members compulsorily migrate to designated pastoral land in the month of mid-June to August (Asar-Bhadra) with our cattle. The village committee will fine us if we do not migrate, and the fine will be based on the number and types of animals we own.*

These network and agency arrangements will assist aspiring seasonal migrants in lowering migration costs, coordinating travel, and providing support during the migration decision and process. The migrant's choice of destination, as well as the benefits and risks associated with it, differ significantly depending on his or her economic and social power (Siddiqui, 2003). Families who can afford to travel to India and other cities in Nepal migrate seasonally, while the rest of the family migrates to the pastoral land.

### **Seasonal migration as a strategy of livelihood diversification and food security**

Diversification of livelihoods is a process in which people increase the number of income-generating activities to improve the livelihood quality and well-being of the family (Biswas & Mallick, 2021). Seasonal migration provides the means for households to cope with economic stress in slack seasons (Momtaz & Shameem, 2016). Gautam, (2017) mentions that remittances from short-distance seasonal migration are much lower than those from longer-term international migration but the economic benefits of seasonal migration have been promising. The household in Kankri will not have enough agricultural production from their land, and this insufficient production is also rapidly consumed by the production of local liquor. Seasonal migration is thus one of the strategies for saving food, dividing household labor, reducing the risk of seasonal deprivation, and generating some cash for family use and festivities. Families have adopted an agricultural seasonal calendar to decide for labor and pastoral migration during less demand of the works in their agriculture field. When we inquired about the base of making their livelihood diversification strategy, Santosh (60 years old) said:

*We consider agricultural and work seasonal calendar of the year and match them with works in India, pastoral land and our village so that we can cultivate our land while working outside to supplement our families' income.*

During the months of March-May and June-November, more people from the study area migrate. People from this area move to hillside pastoral land (*Lekh*) to sow potatoes, beans, maize, and marijuana in the months of March and April. From mid-June to August, they go hillside pastoral land to look after marijuana plantations and graze cattle to produce enough manure so that it can be used for the next sowing season. Families harvest marijuana as well as other crops in October and November. While some members of families are occupied with cattle and their agricultural activities, other people migrate to find work during the dry season. The study has found that families depending on the number of household members discuss and decide who will migrate to India and Nepalese cities, pastoral land in the hillside and stay at lowland (*Bang*) homes to look after their crops and livestock. Bina (41 years old) said that:

*It's not easy to meet the needs of a large family. My husband is currently in Dubai. We do not migrate unless we have a family discussion and make decisions. We decide who will look after our crops in the lowlands and migrate to the pastoral land on the hillsides. My younger son is currently in pastoral land looking after cattle and a marijuana plantation, while my elder son owns a small electrical shop in Kankri, my elder daughter has returned from India after working for two months, and my other two daughters are in school.*

Seasonal migration is linked to a "range and combination of different activities" such as labor, livestock, multiple crops, cash crops, and off-farm and non-farm activities as a means of subsistence. Families plant maize, beans, potato, mustard, and wheat in the low land known as *Bang* in the local Kham dialect, and migrate with their cattle to pastoral land (*Lekh-Goith*) for three months, where they not only graze cattle but also cultivate maize, beans, potato, and marijuana. Apart from non-farm activities like construction labor, the most common seasonal migration is linked to marijuana plantation and harvesting, which connects the seasonal migration to Rukum East and India's hilly region. People finish sowing marijuana on their hillside land in Kankri, Rukum East, and travel to India to sow marijuana during the months of May/June, followed by some other labor work, before returning to their respective villages to harvest marijuana. Some families, on the other hand, decide who grows marijuana in Kankri Rukum and who migrates to India to grow marijuana and take care of other family responsibilities.

Seasonal migration for marijuana cultivation contributes significantly to the families' mixed-income strategy and quick cash generation. Marijuana requires very little labor and care from the growers. People can sell *Charas*, seeds, thread hemp of marijuana to the agent and local shopkeepers. *Charas* is the pure resin processed from the live marijuana plant (Onainor, 2002) by hand which is known as 'Attar' among local people is purchased by the agent at a good price. People also barter marijuana seeds for a large amount of rice. Local shopkeepers offer three

packets of rice for one packet of seed, which cannot be compared to crop production on their agricultural land; this is one of the most effective strategies for ensuring their food security. Hemp is also available for purchase. They also sell hemp at the price of Nepalese rupees 450 for one kilogram. They proudly say that the marijuana field is their paddy field. Dalman (47 years old) explained:

*Most of our people migrate to pastoral areas or India to cultivate marijuana, which allows them to earn more money. They earn nearly twice as much from attar as they do from crops and exchange seeds with rice bags. In our village, selling Charas, also known as attar, earns around rupees 40,000, but in India, earning of people ranges rupees 150,000-2,00,000 in Indian currency. This money is used to meet the needs of the family, to send children to school, and even to cover the costs of migrating to the Gulf countries for employment. That is why, after finishing work in their respective fields, both husband and wife travel to India to work during the dry season. Going gulf countries to work requires more money, time and paperwork, so people prefer seasonal migration to generate quick cash in a short period.*

The annual remittance amount varied widely among the families, ranging from Rs. 25,000 to Rs. 2,00,000. Pastoral migration for livestock husbandry is also a significant source of subsistence income for the Kham people in west Nepal's mid-hill region. During seasonal migration, livestock husbandry is supplemented by small-scale arable farming activities for additional livelihood opportunities.

### **Seasonal migration as environmental adaptation**

Families migrate by assessing climate or weather change to determine the extent of agriculture and livelihood activities which will enhance farmers' coping capacity (Jha et al., 2018). Though livelihood diversification through temporary migration is very primitive and traditional, it has been increasing due to the influences of climate change consequences and enlarged from local to national and even national to international levels (Biswas & Mallick, 2021). People in Kankri make consideration of weather change to make the decision for seasonal migration to diversify livelihood and adjust to the climate. They migrate to hillside pastoral land in the summer when weather is suitable for the cattle, people and land cultivation and then return to their village with their cattle as the colder season approaches. They also prefer locations with similar weather conditions when migrating for short-term employment in India and Nepalese cities. During our visit to the pastoral land, one of the pastoral migrants, Janga Bahadur, (59 years old) said:

*My wife and I temporarily came to Ramli pastoral land to raise cattle and cultivate a small plot of land. We move to a different place to adapt to the changing climate and its consequences. We stayed in the Hulneta area last month in June/July because we could tolerate the cold, but we are leaving in August because there will be more leases, which will be bad for us and our cattle. We'll return to our village in September, and our people will go to work in India, where the weather is similar to that of our village.*

Seasonal migration is also seen as season-based preservation and exploitation of resources which is directly linked with the livelihoods of the families. Each village committee imposed a very high penalty to the families who will not migrate to pastoral land with their cattle. The Kankri's five major village committees each have their own set of rules and fine rates. The fines collected will range from rupees 400 to rupees 1000 per cattle, depending on the type of cattle, and the fines will be used for social work and village festivities.

The first reason for these strict rules and penalties is to preserve fodder in the village so that cattle can be fed during the dry season, as their location is cold and they face a longer dry season. The second reason is to protect their crops from cattle damage and to avoid family conflict as a result of the cattle's damage to their farmland. Ramila (58 years old) said:

*If we don't migrate with our cattle in the designated pastoral region, we must pay a fine of rupees 2000 for Buffalo and 1000 for a cow. In addition to cattle rearing, we grow marijuana, wheat and barley on our land. I understand that migration with our cattle is to save our fodder and plantation in the village, so there is a forced fine. We used to have around 30 families in this Ramli pastoral area who used to come with 400 cows and buffalos, but now we only have 200 cattle.*

During their pastoral migration, they also collect seasonal herbs in the local forest, which has attracted even school-aged children to accompany their families during school vacations to earn money for school expenses. Local merchants come to buy the herbs they've collected. Birbol (18 years old) student said that:

*I'm awaiting the results of my Secondary Education Examination (SEE) while assisting my family in caring for cattle and a marijuana plantation in our pastoral land, along with other crops. I am pleased that I have collected one kilogram of red mushroom (Ekhutte Chyau) and earned rupees 3000, which*

*will help me in enrolling in grade eleven. I can collect the other three types of herbs, but I am unaware of their medicinal properties.*

It has also been found that Kham people utilize their land in accordance with the seasons and climate. During the summer, they migrate to the upper hill to cultivate crops that are suited to the climate and land. These days, they consider less labor-intensive agricultural practices as the young people migrated to the cities and foreign land for jobs and education. They have made changes in the crop plantation to marijuana plantation during seasonal migration because forest animals destroy their crops. Samarpalan (65 years old) said:

*These days we have reduced growing potato, corn, and wheat because wild boar, porcupine, and monkeys destroy our crops, so we prefer marijuana plantation because we can barter the seeds for rice and also earn from the thread.*

In this way, Kham families consider seasonal migration as a means of adapting to the environment by lowering environmental risk, utilizing the land, preserving and maximizing the use of local resources, all of which are directly linked to their environmentally dependent livelihood system.

### **The impact of seasonal migration on family, livelihood and Children's education**

The migration has provided opportunities to diversify family livelihoods and generate savings for social and cultural needs by focusing on cash crops and livestock rearing but arable land are degrading (Rai & Dangal, 2021). One of the positive impacts of seasonal migration is that it has considerably reduced the psychological and social cost of family separation. Those seasonal migrants maintain close contact with their families through phone calls, social media and information relay by friends and relatives. Seasonal migrants will also visit home during festivities and when there is a high labor demand in the field, which will be of great assistance to the aging parents and wives. Seasonal migration can reduce the risks of moving to a new environment because they follow their friends and relatives for short-term employment, which helps them find work and eliminates the need for them to settle permanently in the new socio-cultural and economic environment. Jamuna, (18 years old) said:

*This time, I'm going to Kullu to work seasonally for three months because I want to earn money to buy new clothes, a smartphone, and save some money for my studies. I have friends and relatives who have previous travel and work experience, so my parents agreed to send me for the work and to return during our festival and workload in our agricultural field.*

All intra-village, internal, and international seasonal migration became opportunities for families to generate quick income and build small rural capital. It has also helped families in repaying small loans obtained from self-help groups, relatives, or other creditors, particularly those who travel to India for work. A local community development motivator (Asma, 22 years old) shares that:

*Recently, one of our group members borrowed rupees 10,000 from a self-help women group to send her older daughter to India to work in marijuana harvest field and she returned three months later and paid back the loan and saved rupees 40,000.*

Seasonal migration has an impact on students' ability to attend school, which leads to a decline in their classroom performance and final grades, while also producing higher drop-out rates (Sharma & Dangal, 2019). Children with migrant parents have less supervision and academic support at home, resulting in a less conducive learning environment (Shah, 2021). We have found mixed results about the impact of seasonal migration on the education of children. When we inquired about the effect of seasonal migration on education, a primary school headmaster (Garjaman, 34 years) said that:

*Seasonal migration to India has increased the absentee rate in school comparatively more than seasonal migration to pastoral land in our region with cattle because many school-going children are left at home for school but children from both missed the care and supervision for the study.*

There is positive support of the remittance received from the seasonal migration because the money earned from migration by the families is used to support the continuation of children's education, but this will not prevent absenteeism in the classroom. For example, a previous English medium school teacher (Mahendra, 27 years), explained:

*Remittance or the cash earned by the seasonal migration has helped families to support the continuation of Children's school education but the prevalence of school absence remains in school as they have to take care of animals as livestock herder (Gwala). School drop-out rates are higher among older sons or*

*daughters as they are forced to work for domestic work or earning, causing drop out from schools. Intra-migration increases students in lowland schools but decreases in highland areas.*

Those students who migrated seasonally to earn money for their families missed their school admission for the upper-class and became international labor migrants. Saran (25 years old) said:

*I carried Timber from the forest to village as contractor and laborer in India with my friend. I earned around rupees 1000 per day. I was there for 5-6 months. Then, I returned to study in grade eleven but I missed my admission time, so I have decided to go Dubai and worked for four years.*

While earning from migration allows students to continue their education, the majority of students who participate in seasonal migration drop out because they missed the school enrolment season and migrated for employment. Their exam performance is poor because they missed class and have forgotten what they learned in previous lessons, and they are also more concerned with earning money than with studying.

### **Challenges of seasonal migration and the role of government/non-governmental organization**

Seasonal migrants express their concerns about some insecurities. Many young seasonal migrants cross the border to work seasonally, putting themselves at risk of exploitation, illness, and not receiving proper wages on time. Studies have been done which show that seasonal migrants who work in India have an increased risk of HIV and tuberculosis ( Vaidya & Wu, 2011; Yadav, 2018; IOM, 2019; WFP & NDRI, 2008). Adults have to take care of young seasonal migrants while crossing the border as many school-going people have not made their citizenship cards. Intra-seasonal migrants both within and outside the country are unskilled so they have to work in the low-wage earning field. Intra-seasonal migrants are unaware of where and how locally collected herbs and raw materials from marijuana are used, forcing them to sell for a low price.

Those who migrate with their cattle to the pastoral land are untrained in animal husbandry and shed management, so they are unable to rear healthy cattle and provide basic treatment during illness. Families are gradually transitioning to monetized livelihoods, necessitating the acquisition of value-added product knowledge. Intra-village seasonal migrants to pastoral land who grow marijuana face the constant threat of destruction by the security forces because marijuana cultivation is not legal in Nepal. Families have communal rules to support the household whose plantations are destroyed in a given year, lowering the family's risk of food and income security.

Bhume Rural Municipality and non-governmental organizations including Rukumeli Community Development Center, Nepal Public Awakening Forum and MCDS, are supporting families with training in professional vegetation, goat and pig raising and shed management, as well as material support such as a tunnel, silpaulin, goats and piglets. With these organizations, two local cooperatives have been supporting households in saving locally grown seeds and providing improved seeds varieties to families. Cooperatives also provide training for hand-loomed products made from locally collected hemp. Similarly, self-help groups, child clubs, and youth clubs conduct awareness classes on health and sanitation, child marriage, mental health, adolescent health care, and safe migration. These supports and training have been evidently provided over the last three years, which has raised awareness about monetized livelihoods, developed skills, and prompted families to seek additional information before making a final decision to migrate.

### **CONCLUSION**

Seasonal migration, also known as temporary and short-term migration, is combined subsistence and income-generating activities to meet the livelihood needs and aspirations of families. Similarly, migration is a strategy for generating income, diversifying livelihoods, spreading household risk, earning quick remittances, and improving adaptive capacity as an adaptation to the environment. This study has assessed how seasonal migration contributes to maximizing the range of livelihoods and environmental adaptation strategies of the families living in Kankri, Rukum East district of western Nepal. It was established by this study that families migrate seasonally based on lean agricultural times and weather changes to extend agriculture and livelihood activities. Seasonal migration in the study area provided families and young people with the opportunity to support themselves with food and household goods, exploit natural resources and generate quick remittance. However, it has also increased low attendance and poor performance of the students in the class and increased the risk of illness, exploitation, and untimely payment of wages.

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